fore the *R. Society.* I have found out a Colour moſt exquiſitely black,& comparable to the beſt ink;even in the uſe of the pen, and which will not change by Fire or Salt. This an *Engliſh* Vegetable yielded me, and for ought I know (for I have not repeated the trial on any thing elſe) the like method will ſucceed to good purpoſe. I am, *&c.*

An Accompt of ſome Books.

I. *Theodori Kerckringii M. D, ANTHROPOGENIÆ ICHNOGRAPHIA, ſive Conformatio Fœtus ab Ovo uſque ad Oſſificationis principia, in ſupplementum Oſteogeniæ Fœtuum.* Amſtelodami, 1671. *in* 4°.

After that this Author had the laſt year publiſhed, together with a *Specilegium Anatomicum*, his *Oſteogenia Fœtuum* (both which were deſcribed *N°*.54.*p.* 1094. *ſeqq.*of theſe Tracts;) in in the latter of which he had given an Accompt of the Formation of the *Bones* of an Humane Body, from the *Second* Month after Conception to the very time of the Infants Birth; he conſidered, that there were two things yet left behind, neceſſary to the perfect knowledge of *Oſſification*;*viz. Firſt*, what might be the Rudiments and Form of an Human Body, before it came to have any Firmneſs of Bones. *Secondly*, How after an Infants being born, the ſoft Bones acquire by little and little both their Hardneſs and Magnitude. Waving for the preſent the latter of theſe two, he undertaketh in theſe ſheets (which are but *three*) to deliver the firſt Elements, as 'twere of our Body, *from* and even *before* the time of Conception; affirming.

1. *Non tantùm in nuptis & fœcundis Mulieribus, ſed etiam in Virginibus eſſe non minùs quàm in Gallinis ova ponentibus etiam citra Galli conſuetudinem, ova quædam* * *piſi viridis magnitudine, in quibus humor latet intus, qui, uti aliorum ovorum albumen & vitellus, dum coquitur, indureſcit: Porro, ova illa mulierum, pelliculis extrinſecus circumdari, quæ poſtquam in uterum prolapſa ſunt ova coitu fœcundata, in Amnion & Chorion brevi commutentur; ova autem ipſa, duorum vel trium dierum ſpatio ad ceraſi nigri majoris magnitudinem excreſcere.*

2. Tha

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* *Vide* Nic. Stenonis Muſculi Deſcriptionem Anatomicam *editam* A. 1667. *& deſcriptam N°.*32. *Ubi in Narrationum ibi annexarum poſteriori dictus Dn.* Steno *memorat, per digreſſionem,* dari in Fœminis Teſtes ovario analogos. *Ipſe Author noſter obſervat etiam,* Fallopium *jam tale quid notaſſe.*

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2. That he once met with and open'd a *fœtus* of but *three*, or, at moſt, *four* dayes old, (How he came to know and do this, almoſt incredible thing, the Book it ſelf relateth;) and found in a little Globul, that Nature had already form'd therein the Rudiments of an humane Body, ſo as that he could plainly diſtinguiſh the Head from the maſs of the Body, and ſee in the Head (though but obſcurely) ſeveral pricked marks for Organs; the Body in the mean time being nothing but an undigeſted lump.

3. That in a *Fœtus*, *fifteen* dayes old, he could diſtinguiſh the Eyes, Noſe, Mouth and Ears, Arms and Feet.

4. That in another, *twenty and one* dayes old, he was able to ſeparate the matter prepared for Fleſh and Skin, from that which was to be hardened into Bones. As alſo, that the Head ſeemed nothing but a membrane diſtended with wind and ſpirits; but its Arms and Hands were figured, and the Fingers and Toes themſelves diſtinct. Beſides, that in that Cartilagineous part, deſigned for the Bones, he could number the Ribs.

4. That in one of the age of a *Month*, he diſcover'd ſome more conſiſtency, and the upper and lower Jaw-bone repreſented by two Bony pricks; beſides the *Claviculæ* form'd, and almoſt all the Ribbs diſtinct, the Shoulder-blade, and Elbowes, Thigh-bones, and both the Leg-bones, call'd *Focilia*; (where, by the by, he intimateth, that a certain Acid ſpirit in the world is the Efficient, as of all Firmneſs & Solidity, ſo of that in Bones.)

5. That *laſtly* in a *Fœtus* of ſix Weeks he found, that it only differ'd in Bigneſs from that of *Two Months*, by him formerly deſcribed in his *Oſteogenia*; but that the main thing, he took notice of in this, was the diſtinction of ſix ſmall Bones in the lower Jaw, which after the production of the *Fœtus* into the world do coaleſce into one.

All this the Author hath repreſented by *Schemes*, and endeavoured to confirm by anſwering what may be objected againſt his Obſervations. Mean time 'tis hoped, that what hath been performed a good while ſince, upon this very curious and nice ſubject in *England* by the Learn'd Dr. *Timothy Clark*, one of his Majeſties chief Phyſitians, will at laſt be made publick to the ampler ſatisfaction of inquiſitive Anatomiſts, and the more intimate knowledge of that moſt admirable contrivance and ſtructure of Man.

II. *PHILOSOPHIA VETERUM, é mente Renati Deſ Cartes* *breviter digeſta, ab* Antonio le Grand. *Londini, apud* J. Martin, *R.Soc. Typographum, ad Inſigne Campanæ in Cœmiterio S. Pauli. An.* 1670. *in* 12°.

This Epitome of the *Carteſian* Philoſophy, digeſted by the Author for the uſe and advantage of thoſe, that have inclinations to initiate themſelves in the doctrine of that Famous Philoſopher, begins this his Book by delivering the main Rules, by him eſteem'd neceſſary to the acquiſition of Truth. Thence he proceeds to thoſe ſimple Notions, of which our Cogitations are compounded, and concludes this part with a ſhort doctrine of the *Syllogiſm.*

Having ſuccinctly diſpatcht this, he paſſeth on to treat of *Phyſiology*, and exploding the *Materia prima*, the *Subſtantial Forms*, the *Real Accidents* (as theſe are vulgarly taught) he maketh it his buſineſs to prove, That there are Bodies extended in Length, Breadth and Depth, to which belong *Figure, Motion, Scite*, &c. no otherwiſe than as ſome diſtinct *Modes*. After this, he conſiders the *Heavens, Earth, Water, Air* and *Fire*, and of what parts they are conſtituted. Next, he explains the Fabrick of Man; and giveth an account, how he comes to move and have perception. And he cloſeth all with a Demonſtration (as he ſuppoſeth it to be) of the Exiſtence of a God.

But we ſhall ſay no more of this, ſince we find our ſelves obliged to diſcourſe ſomewhat more largely of an ample Treatiſe of this ſame Argument, lately come to our hands from *Paris*; *viz.*

III. *TRAITE DE PHYSIQUE par* Jaques Rohault. *A* Paris, 1671. *in* 4°.

After that the Author hath in this Ingenious Treatiſe aſſigned the Cauſes, why *Natural Philoſophy* hath been ſteril for ſo many Ages, and found them to be theſe, *viz.* the too ſervil addiction to Authority; the reſting in Metaphyſical, abſtract and general ſpeculations; the ſevering of Reaſon and Experience; and the Neglect of the Mathematiques; He divideth it into *Four* principal parts.

In the *Firſt*, he treateth of the *Body Natural*, and its chief Proprieties, Diviſibility, Motion and Reſt; as alſo, of the Elements and the ſenſible Qualities; where he inſiſteth at large upon the Explication of the Nature and Qualities of Viſion, not ſcrupling to affirm, that upon this ſubject alone he hath collected and deliver'd more Truths in eight or nine Chapters, than are contained in many great Volums, which treat of Opticks, Dioptricks and Catoptricks after the manner of the Antients. In this part 'tis chiefly that *Ariſtotle*, but eſpecially his quarrelling and claſhing Commentators and Followers, are taken to task; the Author repreſenting the *Peripatetick* Principles as altogether inſignificant and uſeleſs, for a rational Explication of any effect in Nature, and taking notice, that *Privation* (one of thoſe principles) is not *in* things nor concurs to their compoſition; that *Matter* (another principle) is, according to them, a ſomething I know not what, and *Form* (the third) ſuch another I know not what; as if giving a meer Name to a thing not known, were enough to make it known. Beſides which, he obſerveth, that the ſame Sect hath introduced in Philoſophy ſtore of ſpecious notions, altogether Chymerical, as Nature's *Abhorrency of a Vacuum*, *Attraction*, *Sympathy* and *Antipathy*, &c. invented to give a reaſon in ſhew of what was not at all underſtood. For, *ſaith he*, what doth it teach a man of the Nature of a *Loadſtone*, to ſay, it hath an *Attractive* vertue, or a Sympathy with Iron. And the *Fear of a Vacuity* anſwers a Queſtion no more, than if a man, being asked, How the Wood came to *Paris* out of remote Provinces, ſhould anſwer, It came there by the *Fear of Cold*, that is, anſwer from the *Final* cauſe, when the *Efficient* is demanded. Moreover, he rejecteth the *Ariſtotelian* Elements, as well as the common *Chymical* ones, and endeavours to eſtabliſh the three *Carteſian*; proceeding from the *Firſt Diviſion* and *Motion*, ſuppoſed to have befaln the Uniform Matter produced by the firſt Author of things. He noteth further, that the *Peripaticks* explain not to any purpoſe, wherein the Senſible Qualities do conſiſt, teaching nothing ſatisfactory of Siccity, Humidity, Hardneſs, Fluidity, Heat, Cold, Taſte, Odour, Sound, Light, Colour, &c; that they make Veſſels burſt *ex metu Vacui*; and aſſign the cauſe of the roundneſs of Drops to be the Mutual Love, which the parts of the ſame Liquor have for one another, whence a cloſe union, and ſo a roundneſs; that they affirm of Heat and Cold only what they *do* (and that erroneouſly too) and not what they *are*; that they teach nothing of what maketh a Body ſavoury, ſonorous, lucid, colour'd; that they make a great but vain ſhew with their unconceivable *intentional ſpecies*; that they aſſert Viſion to be made in the *Chryſtallin*, &c.

In the *Second* part he treateth of the *Syſtem of the World*, according to the Three celebrated Hypotheſes, of *Ptolomy*, *Copernic*, and *Tycho*, but giveth the preference to the *Copernican*, as the plaineſt and the moſt rational; eſteeming mean while, that, as to the ſcituation of the parts of the Univerſe, *Tycho* agreeth with *Copernic*, except that he maketh the Firmament to have the Earth for its Center; ſo that all the difference between theſe two Opinions as to the Earth, related

ted to the Fluid matter of the World through which it paſſeth, conſiſts only in this, that *Copernic* ſpeaketh of the motion of the Earth, as one would do, that being to tell how he had been in a Coach from *Paris* to *Orleans*, would mark a certain way, and ſay, he had paſſed over it by the motion of a Coach drawn by horſes; wheras *Tycho* would ſpeak as another man, who though he had likewiſe been in a Coach from *Paris* to *Orleans* the ſame way, yet would not acknowledge any motion neither in the Coach nor in the Horſes, but maintain, that the *Way* it ſelf had moved, and the wheels of the Coach had only turn'd about their Axle-trees, and the Horſes done nothing but lifted up their legs, to let the way ſlide away under them. He obſerveth further that the *Copernican* ſyſteme rightly underſtood attributeth no motion at all to the Earth: For, Motion being taken for nothing elſe than for a ſucceſſive application of a Body to the ſeveral parts of the immediately encompaſſing and neighbouring Bodies, 'tis plain, that what is call'd the *Diurnal* motion of the Earth, belongs rather to the Maſs compos'd of the Earth, the Seas, and the Air, than to the Earth in particular, which is to be eſteem'd in a perfect Reſt, foraſmuch as ſhe is carried away by the Torrent of the matter wherein ſhe ſwims; juſt as we ſay, that a Man is at reſt that ſleeps in a ſhip, whil'ſt the ſhip is indeed in motion: And ſo that which is called the *Annual* motion of the Earth, doth not all appertain to her, nor even to the compos'd maſs of Earth, Water and Air, but to the Celeſtial matter, which carrieth this Maſs about the Sun. After this he diſcourſeth of the Nature of the Stars and their influences. Next, he renders an Accompt of *Gravity* and *Levity* (which for want of premiſes, he could not ſpeak of in the firſt part) and maketh Gravity nothing elſe but a leſs Levity. And laſtly, he concludeth this part with the doctrine of the *Flux* and *Reflux of the Sea*, as depending from the Preſſure of the Moon.

In the *Third* part he explains the nature of the *Earth*, and Earthly Bodies, that is, ſuch as are either contain'd in it or are about it, as the Air, Water, Fire, Salts, Oils, Mettals, Minerals, and Meteors. Where, among many other Remarques, he declareth, that though the Tranſmutation of baſer mettals into Silver or Gold be not *abſolutely* impoſſible, yet *morally* 'tis; foraſmuch as men not knowing in particular, which is the Figure and Size of the little particles that enter into the Compoſition of Mettals, nor the ſhape and ſize of the other ingredients, that may be neceſſary to effect this Tranſmutation, nor have yet found the ſecret to unite them together; that therefore it may very well be concluded, that if it be true what is ſaid of ſome Chymiſts having formerly converted Lead into Gold, it hath happen'd by ſo great a chance, as if a handful of ſand being let fall from on high upon a Table, the grains had ſo orderly ranged themſelves, as to make one read diſtinctly a page of *Virgil's Æneids*.

In the *Fourth* he hath endeavour'd to compriſe all what he thinks is hitherto with any certainty known of the *Body Animate* : where, amongſt a great number of other *Phœnomena*, he giveth a particular explication of *Fevers*, eſteeming, that all the ſtrange Symptoms thereof may be very well explain'd by only ſuppoſing, that a little portion of our Blood, or of ſome humor mixing with it when it paſſeth to the Heart, comes to be ſtop'd by ſome cauſe or other, in ſome place of our Body, whence it begins not to flow but at the end of a certain time, and when it is ſo corrupted that it ſomewhat reſembleth *Green Wood* in its manner of kindling, that is to ſay ; this Wood being caſt into the Fire, ſeems at firſt to have no diſpoſition at all to take fire, but appears rather capable to extinguiſh it ; ſo alſo this portion of corrupted humour is at firſt indiſpoſed to be heated and dilated, when it comes to paſs through the Heart ; but then as the Green Wood burns at length more fiercely than what is Dry ; ſo this humour may at laſt be heated and rarified much more than the Bloud is in its ordinary temper, *&c.*

IV. *Novæ Hypotheſeos de PULMONUM MOTU & RESPIRATIONIS USU Specimen.* Londini 1671. *in* 8°.

The *Anonymous* Author of this ſmall Tract being of opinion, that none of thoſe, that have hitherto written of the *Motion* of the *Lungs* and the *Uſe* of *Reſpiration*, have lighted upon the truth ; undertaketh to ſhew, that the Lungs do not, as hath been hitherto received, follow the Motion of the *Thorax* and *Diaphragme*, nor are moved and filled, like Bellows, becauſe they are diſtended ; alledging that he hath obſerved from the ſhape and Scituation of the *Diaphragme*, and from its Connexion with the other *viſcera*, and the Breaſt and *Abdomen*, that the ſaid *Diaphragme* cannot be moved up and down, or the Cheſt, by the *Syſtole* thereof, be dilated and Inſpiration performed ; foraſmuch as it is both above and below, by the intervention of divers membrans, ſo connected with other parts, that it can neither riſe nor ſubſide, no not ſo much as be impelled up and down : But that this *Riff* can only be moved forwards *extrorſum* and backwards *introrſum* ; forwards in Inſpiration, backwards in Exſpiration. And eſteeming this to be its proper motion, moſt ſuitable to its Fabrick, Scite, and the whole work of Reſpiration ; he declareth openly, that the Motion and Inflation of the Lungs depends not upon the Motion of the Thorax and Diaphragme, but that, for *Inſpiration*, the Lungs are dilated by the Elaſtick force of the Air ruſhing in ; and that upon their Dilatation follows the Intumeſcence of the *Diaphragme* as of a Sail, and its protruſion forwards , and thereupon further the propulſion of the *Thorax* : And that for *Expiration*, the Diaphragme is again contracted, and reſtored to its juſt figure and conſiſtence, and the now effete, clogg'd and ſpring-leſs Air driven out : This Author conceiving, that as long as the force of the *inſpired* Air exceeds the Elaſtic power or the reſiſtence of the Air or the halituous ſubſtance

ſtance *included* in the Cheſt, ſo long laſts *Inſpiration*; but when the force of the *included* Air, by means of the Contraction of the Diaphragme and its preſſure, overcomes the ſtrength of the *inſpired* Air, then begins and ſo long laſts *Expiration*. So that, according to him, *Reſpiration* is nothing elſe, than a Reciprocation of the Air incloſed in the Cheſt, and an Alternate motion of the Lungs and the Diaphragme; whereby the external Air becomes the firſt origin of all the Animal motion.

As to the *Uſes* of Reſpiration, he eſteems, both from a certain Relation to be found in *Fontana*, and from the ſtructure, Motion and Scite of the Diaphragme, that there are other Uſes of it, than the Cooling of the Heart, the Fanning of the Blood, the Diſcharge of ſteams, the Conveyance of a Nitrous aliment, the Comminution and ſubduing of the Blood, and its intimate commixture with the Chyle, and the promotion of the Blood from one ventricle of the heart to the other; for all this, he ſaith, is perform'd by the help of the *Lungs*, (which is but *one* Organ of Reſpiration:) But then he would maintain, that by the other Inſtrument of Reſpiration, the *Diaphragme* and its Preſſion, there are effected ſuch other things, as are no leſs neceſſary to the preſervation of life, than the former; *viz.* The continual Preſſure of the Chyle out of the ſtomach into the inteſtins, and from thence by the Milky veins into the Glanduls of the Meſentery, and ſo further into the Chyliferous Channel; as alſo the Motion of the Blood out of the *Porta* into the Liver, and out of the Liver into the *Cava*; and that of the Gall into the Bladder of Gall, and thence into the common *ductus* and the Guts: perhaps alſo that thence proceeds the firſt Natural Inſtinct or Perception, exciting alſo the Animal motions.

Which being thus propoſed and deduced by him, he endeavours to ſatisfie the objections that may be made againſt this Hypotheſis; for which, and many other particulars, we refer to the Author himſelf.

NOTE,

AT the end of *p.* 2125. the *Reader* is deſired to add, to prevent all miſtakes, what the Author of that Letter ſignified *April* 21. 1671. to the *Publiſher*, ſince that was Printed, *viz.* That in a very ſharp Froſt the Bleeding is ſtop'd till the weather begins to change; but in a moderate Froſt, though it ſtop in the night, yet in the day-time, if the Sun ſhines out, the Trees will bleed, though the Froſt continue. What we ſaid in our Letter, Printed N°. 57. *p.* 1166. *l.* 45. that Cold did not promote but hinder bleeding; we find holds true, if the Cold be without Froſt.

Beſides, *p.* 2126. at the end of Mr. *Willoughby*'s Letter may be added, what he further imparted in the above ſaid Letter of *Apr.* 21. *viz.* That ſince his laſt, he had made tryal upon *Walnut* and *Sycamore* as to the tranſmitting of Water, and found, that the water runs through both, but nothing ſo faſt as thorough *Birch*.

ERRATA. In Numb. 69. *p.* 2091. *l.* 24. *r. and purſe.*
In this Numb. 70. *p.* 2128. *l.* 17. *r.* 9th *inſtant.* *p.* 2130. *l.* 3. *r. deſcent.*

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